

WHAT IS CLAIMED IS:

1. An article of manufacture comprising a computer usable medium having computer readable program code means embodied therein, the computer readable
5 program code means comprising:

computer readable program code means for causing a computer to extract an access sequence indicating a continuous access by a same requester based on a Web access log which relates first identification data
10 indicating an access requester to second identification data indicating contents to be accessed;

computer readable program code means for causing a computer to extract, when the Web access log relates second identification data indicating a retrieval
15 system to a retrieval keyword which is input to the retrieval system by the requester, the retrieval keyword from the Web access log; and

computer readable program code means for causing a computer to calculate a qualitative evaluation value of the access sequence based on a qualitative evaluation
20 rule for defining the qualitative evaluation value of a retrieval result of the retrieval system, and create first relation data indicating a relation between the qualitative evaluation value and a retrieval keyword
25 which is input in the access sequence.

2. An article of manufacture according to claim 1, further comprising:

computer readable program code means for causing
a computer to calculate a quantitative evaluation value
of the access sequence based on a quantitative
evaluation rule for defining the quantitative
5 evaluation value of a retrieval result of the retrieval
system, and create second relation data indicating
a relation of the retrieval keyword which is input in
the access sequence, the qualitative evaluation value
and the quantitative evaluation value.

10 3. An article of manufacture according to
claim 2, further comprising:

computer readable program code means for causing
a computer to create a graph indicating a relation of
the qualitative evaluation value and the quantitative
15 evaluation value based on the second relation data.

4. An article of manufacture according to
claim 2, wherein

the quantitative evaluation value comprises a need
value for a retrieval result which increases as the
20 number of inputs of the retrieval keyword increases;
and

the quantitative evaluation rule comprises a rule
under which the need value increases as the number of
inputs of the retrieval keyword increases.

25 5. An article of manufacture according to
claim 2, wherein

the Web access log further relates access time

data to the first identification data and the second identification data; and

the quantitative evaluation value calculating program code means creates the second relation data for each time period based on the access time data, and
5 which further comprises:

computer readable program code means for causing a computer to create trend data for the retrieval keyword, the trend data indicating a transition of the
10 qualitative evaluation value and the quantitative evaluation value based on the second relation data for each time period.

6. An article of manufacture according to claim 5, wherein

15 the Web access log further relates an access time data to the first identification data and the second identification data; and

the quantitative evaluation value calculating program code means creates the second relation data for each time period based on the access time data, and
20 which further comprises:

computer readable program code means for causing a computer to calculate the qualitative evaluation value and the quantitative evaluation value for each
25 category and for each time period based on the second relation data and category data which relates the retrieval keyword to a category to which the keyword

belongs; and

computer readable program code means for causing
a computer to create trend data for the retrieval
keyword, the trend data indicating a transition of the
5 qualitative evaluation value and the quantitative
evaluation value for each time period and each
category.

7. An article of manufacture according to
claim 6, wherein the trend data obtaining program code
10 means comprises:

computer readable program code means for causing
a computer to detect a region to which the retrieval
keyword belongs of regions determined by the boundaries
at each time period;

15 computer readable program code means for causing
a computer to determine whether the retrieval keyword
belonging region changes; and

computer readable program code means for causing
a computer to add a message corresponding to a change
20 in the region to a retrieval keyword in which the
region is changed, and

the trend data includes data indicating a result
produced by adding the message to the retrieval keyword
in which the region is changed.

25 8. An article of manufacture according to
claim 5, wherein the trend data obtaining program code
means calculates a moving distance and a moving

direction of the retrieval keyword at each switching of the time period based on the qualitative evaluation value and the quantitative evaluation value of each time period, and

5 the trend data includes data indicating the moving distance and the moving direction of the retrieval keyword at each switching of the time period.

9. An article of manufacture according to claim 5, wherein the trend data obtaining program code
10 means comprises:

computer readable program code means for causing a computer to calculate a moving distance of the retrieval keyword at each switching of each time period based on the qualitative evaluation value and the
15 quantitative evaluation value of the retrieval keyword at each time period;

computer readable program code means for causing a computer to determine whether or not the moving distance exceeds a threshold;

20 computer readable program code means for causing a computer to acquire the moving direction of the retrieval keyword when the moving distance exceeds the threshold; and

computer readable program code means for causing
25 a computer to add a message corresponding to the moving direction to a retrieval keyword in which the moving distance exceeds the threshold, and

the trend data includes data produced by adding the message to the retrieval keyword in which the moving distance exceeds the threshold.

10. An article of manufacture according to
5 claim 5, further comprising:

computer readable program code means for causing a computer to arrange indexes indicating the retrieval keyword of each time period corresponding to the qualitative evaluation value and the quantitative
10 evaluation value on a space which adopts the qualitative evaluation value and the quantitative evaluation value as multiple axes, based on the trend data and display a graph by connecting the indexes with lines corresponding to an elapse order of the time
15 period.

11. An article of manufacture according to claim 2, wherein the Web access log relates the first identification data and the second identification data to access time data, and

20 the quantitative evaluation value calculating program code means creates the second relation data for each time period based on the access time data, and which further comprises:

computer readable program code means for causing
25 a computer to calculate the qualitative evaluation value and the quantitative evaluation value on the category of each time period based on category data

which relates the retrieval keyword to a category to which the retrieval keyword belongs and relation data of each time period; and

5 computer readable program code means for causing a computer to create trend data indicating a transition of the qualitative evaluation value and the quantitative evaluation value on the category.

12. An article of manufacture according to claim 11, further comprising:

10 computer readable program code means for causing a computer to arrange indexes indicating the category of each time period corresponding to the qualitative evaluation value and the quantitative evaluation value on a space which adopts the qualitative evaluation
15 value and the quantitative evaluation value as multiple axes, based on the trend data and display a graph by connecting the indexes with lines corresponding to an elapse order of the time period.

13. An article of manufacture according to
20 claim 1, wherein

the Web access log further relates the second identification data to reference information including a retrieval keyword,

the access sequence extracting program code means
25 comprises a program code means for causing a computer to extract, when the reference information indicates the retrieval system, an access sequence including

an access to contents related to the reference
information,

the retrieval keywords extracting program code
means comprises a program code for causing a computer
5 to extract the retrieval keyword included in the
reference information; and

the qualitative evaluation value calculating
program code means comprises a program code means
for causing a computer to calculate a qualitative
10 evaluation value of the access sequence after the
retrieval keyword included in the reference information
is input.

14. An article of manufacture according to
claim 1, wherein

15 a retrieval keyword to be analyzed is input in
the access sequence and contents indicated by second
identification data related to the retrieval keyword to
be analyzed are accessed after the retrieval keyword to
be analyzed is input,

20 the qualitative evaluation rule comprises a rule
which, based on the extracted keyword and relation data
between the retrieval keyword to be analyzed and second
identification data indicating contents which increases
a success degree when the contents are accessed after
25 the retrieval keyword to be analyzed is input,
increases the success degree of the access sequence,
and

the qualitative evaluation value comprises the success degree.

15 15. An article of manufacture according to claim 14, wherein the qualitative evaluation rule increases the success degree as the number of accesses until the contents to be accessed indicated by the second identification data related with the retrieval keyword to be analyzed is accessed after the retrieval keyword to be analyzed is input, decreases.

10 16. An article of manufacture according to claim 1, wherein the Web access log relates the first identification data and the second identification data to access time data for each access,

15 the qualitative evaluation rule comprises a rule which increases the satisfaction degree of the access requester as a time interval from an access after the retrieval keyword is input to a last access increases, and

20 the qualitative evaluation value comprises the satisfaction degree.

17. An article of manufacture comprising a computer usable medium having computer readable program code means embodied therein, the computer readable program code means comprising:

25 computer readable program code means for causing a computer to extract an access sequence indicating a continuous access by a same requester based on a Web

access log which relates first identification data indicating an access requester to second identification data indicating contents to be accessed;

5 computer readable program code means for causing a computer to extract, when the Web access log relates second identification data indicating a retrieval system to a retrieval keyword which is input to the retrieval system by the requester and the retrieval keyword is input in the access sequence, the retrieval
10 keyword which is input in the access sequence from the Web access log; and

computer readable program code means for causing a computer to calculate a qualitative evaluation value of the access sequence based on a qualitative evaluation
15 rule for defining the qualitative evaluation value of a retrieval result of the retrieval system, and create first relation data indicating a relation between the extracted retrieval keyword and the qualitative evaluation value.

20 18. An article of manufacture comprising a computer usable medium having computer readable program code means embodied therein, the computer readable program code means comprising:

computer readable program code means for causing
25 a computer to extract, based on a Web access log which relates first identification data indicating an access requester, second identification data indicating

contents to be accessed, and reference information,
an access sequence indicating a continuous access
including an access to the contents to be accessed
indicated by the second identification data by a same
5 requester when the reference information indicates
a retrieval system;

computer readable program code means for causing a
computer to extract a retrieval keyword included in the
reference information when the reference information
10 indicates the retrieval system; and

computer readable program code means for causing
a computer to calculate a qualitative evaluation value
of the access sequence after inputting the extracted
retrieval keyword based on a qualitative evaluation
15 rule for defining the qualitative evaluation value of
a retrieval result of the retrieval system, and create
first relation data indicating a relation between the
qualitative evaluation value and the retrieval keyword
corresponding to the access sequence.

20 19. An article of manufacture comprising a
computer usable medium having computer readable program
code means embodied therein, the computer readable
program code means comprising:

computer readable program code means for causing
25 a computer to extract, based on a Web access log which
relates first identification data indicating an access
requester to second identification data indicating

contents to be accessed, a sub-access sequence
indicating a continuous access by a same requester;

computer readable program code means for causing
a computer to extract the retrieval keyword when the
5 Web access log relates second identification data
indicating a retrieval system to a retrieval keyword
input to the retrieval system by the requester; and

computer readable program code means for causing
a computer to calculate a qualitative evaluation value
10 of the sub-access sequence based on a qualitative
evaluation rule for defining the qualitative evaluation
value of a retrieval result of the retrieval system,
and create relation data indicating a relation between
the extracted retrieval keyword and the qualitative
15 evaluation value.

20. An article of manufacture according to
claim 19, wherein the sub-access sequence has
a starting end at which retrieval result contents are
accessed and a terminal end at which a next continuous
20 access starts.

21. An article of manufacture according to
claim 19, wherein the sub-access sequence has
a starting end at which retrieval result contents are
accessed and a terminal end which is a last access
25 preceding to a next starting end.

22. An article of manufacture according to
claim 19, wherein the sub-access sequence has

a starting end at which retrieval result contents are accessed and a terminal end which is a last access preceding to a next starting end when the next starting end is found, and having the starting end and a
5 terminal end at which the continuous access ends when the next starting end is not found.

23. A retrieval keyword analyzing system comprising:

means for extracting an access sequence indicating
10 a continuous access by a same requester based on a Web access log which relates first identification data indicating an access requester to second identification data indicating contents to be accessed;

means for extracting, when the Web access log
15 relates second identification data indicating a retrieval system to a retrieval keyword input to the retrieval system by the requester, the retrieval keyword from the Web access log; and

means for calculating a qualitative evaluation
20 value of the access sequence based on a qualitative evaluation rule for defining the qualitative evaluation value of a retrieval result of the retrieval system, and creating first relation data indicating a relation between the qualitative evaluation value and a
25 retrieval keyword which is input in the access sequence.

24. The retrieval keyword analyzing system

according to claim 23, further comprising:

means for calculating a quantitative evaluation value of the access sequence based on a quantitative evaluation rule for defining the quantitative evaluation value of a retrieval result of the retrieval system, and creating second relation data indicating a relation of the retrieval keyword which is input in the access sequence, the qualitative evaluation value and the quantitative evaluation value.

10 25. A retrieval keyword analyzing system comprising:

means for extracting an access sequence indicating a continuous access by a same requester based on a Web access log which relates first identification data indicating an access requester to second identification data indicating contents to be accessed;

means for extracting, when the Web access log relates second identification data indicating a retrieval system to a retrieval keyword which is input to the retrieval system by the requester and the retrieval keyword is input in the access sequence, the retrieval keyword which is input in the access sequence from the Web access log; and

means for calculating a qualitative evaluation value of the access sequence based on a qualitative evaluation rule for defining the qualitative evaluation value of a retrieval result of the retrieval system,

and creating first relation data indicating a relation between the extracted retrieval keyword and the qualitative evaluation value.

26. A retrieval keyword analyzing system comprising:

means for extracting, based on a Web access log which relates first identification data indicating an access requester, second identification data indicating contents to be accessed, and reference information, an access sequence indicating a continuous access including an access to the contents to be accessed indicated by the second identification data by a same requester when the reference information indicates a retrieval system;

means for extracting a retrieval keyword included in the reference information when the reference information indicates the retrieval system; and

means for calculating a qualitative evaluation value of the access sequence after inputting the extracted retrieval keyword based on a qualitative evaluation rule for defining the qualitative evaluation value of a retrieval result of the retrieval system, and creating first relation data indicating a relation between the qualitative evaluation value and the retrieval keyword corresponding to the access sequence.

27. A retrieval keyword analyzing system comprising:

means for extracting, based on a Web access log which relates first identification data indicating an access requester to second identification data indicating contents to be accessed, a sub-access
5 sequence indicating a continuous access by a same requester and having a starting end at which retrieval result contents are accessed and a terminal end at which a next continuous access starts;

means for extracting the retrieval keyword when
10 the Web access log relates second identification data indicating a retrieval system to a retrieval keyword input to the retrieval system by the requester; and

means for calculating a qualitative evaluation value of the sub-access sequence based on a qualitative
15 evaluation rule for defining the qualitative evaluation value of a retrieval result of the retrieval system, and creating relation data indicating a relation between the extracted retrieval keyword and the qualitative evaluation value.

20 28. A retrieval keyword analyzing method comprising the steps of:

extracting an access sequence indicating a continuous access by a same requester based on a Web access log which relates first identification data
25 indicating an access requester to second identification data indicating contents to be accessed;

extracting, when the Web access log relates second

identification data indicating a retrieval system to a retrieval keyword which is input to the retrieval system by the requester, the retrieval keyword from the Web access log; and

5 calculating a qualitative evaluation value of the access sequence based on a qualitative evaluation rule for defining the qualitative evaluation value of a retrieval result of the retrieval system, and creating first relation data indicating a relation between the
10 qualitative evaluation value and a retrieval keyword which is input in the access sequence.

29. The retrieval keyword analyzing method according to claim 28, further comprising the step of:

 calculating a quantitative evaluation value of the
15 access sequence based on a quantitative evaluation rule for defining the quantitative evaluation value of a retrieval result of the retrieval system, and creating second relation data indicating a relation of the retrieval keyword which is input in the access
20 sequence, the qualitative evaluation value and the quantitative evaluation value.

30. The retrieval keyword analyzing method according to claim 29, wherein

 the Web access log further relates access time
25 data to the first identification data and the second identification data; and

 the quantitative evaluation value calculating

means creates the second relation data for each time period based on the access time data, and which further comprises the step of:

5 creating trend data for the retrieval keyword, the trend data indicating a transition of the qualitative evaluation value and the quantitative evaluation value based on the second relation data for each time period.

31. The retrieval keyword analyzing method according to claim 29, wherein

10 the Web access log further relates an access time data to the first identification data and the second identification data; and

 the quantitative evaluation value calculating means creates the second relation data for each time
15 period based on the access time data, and which further comprises the steps of:

 calculating the qualitative evaluation value and the quantitative evaluation value for each category and for each time period based on the second relation data
20 and category data which relates the retrieval keyword to a category to which the keyword belongs; and

 creating trend data for the retrieval keyword, the trend data indicating a transition of the qualitative evaluation value and the quantitative evaluation value
25 for each time period and each category.

32. A retrieval keyword analyzing method comprising the steps of:

extracting an access sequence indicating a
continuous access by a same requester based on a Web
access log which relates first identification data
indicating an access requester to second identification
5 data indicating contents to be accessed;

extracting, when the Web access log relates second
identification data indicating a retrieval system to
a retrieval keyword which is input to the retrieval
system by the requester and the retrieval keyword is
10 input in the access sequence, the retrieval keyword
which is input in the access sequence from the Web
access log; and

calculating a qualitative evaluation value of the
access sequence based on a qualitative evaluation rule
15 for defining the qualitative evaluation value of a
retrieval result of the retrieval system, and creating
first relation data indicating a relation between
the extracted retrieval keyword and the qualitative
evaluation value.

20 33. A retrieval keyword analyzing method
comprising the steps of:

extracting, based on a Web access log which
relates first identification data indicating an access
requester, second identification data indicating
25 contents to be accessed, and reference information,
an access sequence indicating a continuous access
including an access to the contents to be accessed

indicated by the second identification data by a same requester when the reference information indicates a retrieval system;

5 extracting a retrieval keyword included in the reference information when the reference information indicates the retrieval system; and

calculating a qualitative evaluation value of the access sequence after inputting the extracted retrieval keyword based on a qualitative evaluation rule for
10 defining the qualitative evaluation value of a retrieval result of the retrieval system, and creating first relation data indicating a relation between the qualitative evaluation value and the retrieval keyword corresponding to the access sequence.

15 34. A retrieval keyword analyzing method comprising the steps of:

...extracting, based on a Web access log which relates first identification data indicating an access requester to second identification data indicating
20 contents to be accessed, a sub-access sequence indicating a continuous access by a same requester and having a starting end at which retrieval result contents are accessed and a terminal end at which a next continuous access starts;

25 extracting the retrieval keyword when the Web access log relates second identification data indicating a retrieval system to a retrieval keyword

input to the retrieval system by the requester; and

calculating a qualitative evaluation value of the
sub-access sequence based on a qualitative evaluation
rule for defining the qualitative evaluation value of

5 a retrieval result of the retrieval system, and
creating relation data indicating a relation between
the extracted retrieval keyword and the qualitative
evaluation value.